

CLAIMS

We Claim:

- 1 1. A method comprising:
 - 2 verifying if a brand string feature is supported on a processor;
 - 3 retrieving a brand string;
 - 4 interpreting the brand string which includes information pertaining to a maximum
 - 5 operating frequency of the processor; and
 - 6 outputting the maximum operating frequency.
- 1 2. The method of claim 1, wherein interpreting the brand string includes scanning the
- 2 brand string in reverse order for a quantity.
- 1 3. The method of claim 1, wherein verifying a brand string feature is supported on
- 2 a processor is accomplished by verifying if a value loaded in a register by a processor
- 3 identification instruction is greater than or equal to a selected value.
- 1 4. The method of claim 1, wherein the register is the EAX register, the processor
- 2 identification instruction is the CPUID instruction, and the selected value is 80000000h.
- 1 5. A method comprising:
 - 2 loading a register with a first specified value;
 - 3 executing a processing instruction;
 - 4 verifying that the returned value in the register logically anded with a second specified
 - 5 value does not equal zero;
 - 6 verifying that a value the processing instruction returns is greater than or equal to a
 - 7 third specified value;
 - 8 scanning the string in reverse order for at least one specified substring;
 - 9 parsing the next digits as a decimal number;
 - 10 determining a multiplier value according to the specified substring;
 - 11 multiplying the decimal number by the multiplier value to output a maximum
 - 12 operating frequency.

1 6. The method of claim 5, wherein the register is one of a plurality of general purpose
2 registers.

1 7. The method of claim 5, wherein the first specified value is 0x80000000.

1 8. The method of claim 5, wherein the specified substring is at least one of "zHM",
2 "zHG", and "zHT".

1 9. A machine-readable medium that provides instructions, which when executed by a
2 machine, causes the machine to perform operations comprising:

3 verifying if a brand string feature is supported on a processor;
4 retrieving a brand string;
5 retrieving a maximum operating frequency of the processor from the brand
6 string; and
7 outputting the maximum operating frequency.

1 10. The machine-readable medium of claim 9, wherein retrieving the maximum
2 operating frequency of the processor from the brand string includes scanning the brand
3 string in reverse order for the maximum operating frequency.

1 11. The machine-readable medium of claim 9, wherein verifying if a brand string
2 feature is supported on a processor is accomplished by verifying a value loaded in a
3 register by a processor identification instruction is greater than or equal to a selected value.

1 12. A machine-readable medium that provides instructions, which when executed by a
2 machine, causes the machine to perform operations comprising:

3 loading a register with a first specified value;
4 executing a processing instruction;
5 verifying that the returned value in the register logically anded with a second specified
6 value does not equal zero;
7 verifying that a value the processing instruction returns is greater than or equal to a
8 third specified value;
9 scanning the string in reverse order for at least one specified substring;

10 parsing the next digits as a decimal number;
11 determining a multiplier value according to the specified substring;
12 multiplying the decimal number by the multiplier value to output a maximum
13 operating frequency.

1 13. The machine-readable medium of claim 12, wherein the register is one of a
2 plurality of general purpose registers.

1 14. The machine-readable medium of claim 12, wherein the register is the EAX
2 register.

1 15. The machine-readable medium of claim 12, wherein the first specified value is
2 0x80000000, the processing identification instruction is a CPUID instruction, and the third
3 specified value is 80000004.

1 16. The machine-readable medium of claim 12, wherein the processing instruction is a
2 processing identification instruction.

1 17. The machine-readable medium of claim 12, wherein the specified substring is at
2 least one of “zHM”, “zHG”, and “zHT”

1 18. A computer comprising:
2 a processor to execute a processing instruction;
3 a memory element coupled to the processor;
4 input and output facilities coupled to the processor;
5 at least one register located within the processor, said at least one register able to
6 contain at least one string;
7 said processor to
8 execute a processing instruction to interpret a numerical quantity in the at
9 least one register;
10 verify at least one processing feature is supported;
11 scan the at least one string for a multiplier;
12 scan the at least one string for a frequency; and

13 use the multiplier and frequency to determine a maximum operating
14 frequency.

1 19. The computer of claim 18, wherein the register is a general purpose register.

1 20. The computer of claim 18, wherein the processing instruction is a processing
2 identification instruction.

1 21. The computer of claim 18, wherein the at least one string is a brand string.

1 22. A processor comprising:

2 a first register;

3 a second register to store maximum operating frequency information;

4 at least one execution unit to execute instructions;

5 said processor to

6 execute a processing instruction to copy the maximum operating frequency
7 information from the second register to the first register;

8 verify at least one feature relating to the maximum operating frequency
9 information is supported;

10 scan the maximum operating frequency information in the first register for
11 a multiplier;

12 scan the maximum operating frequency information in the first register for
13 a frequency;

14 use the multiplier and frequency to determine a maximum operating
15 frequency of the processor.

1 23. The processor of claim 22, wherein the first register is one of a plurality of general
2 purpose registers.

1 24. The processor of claim 22, wherein the first register is the EAX register.

1 25. The processor of claim 22, wherein the second register is one of a plurality of
2 control registers.

1 26. The processor of claim 22, wherein the processing instruction is a processing
2 identification instruction.

1 27. The processor of claim 22, wherein the maximum operating frequency information
2 is a brand string.

1 28. The processor of claim 22, wherein said processor is further able to
2 measure a current operating frequency of the processor; and
3 compare the maximum operating frequency to the current operating frequency.

1 29. The processor of claim 22, wherein the maximum operating frequency information
2 is stored in the second register at manufacturing time.

1 30. The processor of claim 22, further comprising system software to store maximum
2 operating frequency information set at manufacturing time.

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